



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,844	10/30/2003	Wayne F. Block	GEMS8081.185	2843
27061	7590	08/02/2005	EXAMINER	
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (GEMS)			KAO, CHIH CHENG G	
14135 NORTH CEDARBURG ROAD				
MEQUON, WI 53097			ART UNIT	PAPER NUMBER
			2882	

DATE MAILED: 08/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/605,844

Applicant(s)

BLOCK ET AL.

Examiner

Chih-Cheng Glen Kao

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6,9-11,16,18,20,22 and 23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,3-6,9,16,18,20,22 and 23 is/are allowed.
- 6) ☒ Claim(s) 10 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 3 and 5 are objected to because of the following informalities, which appear to be minor draft errors.

In the following format (location of objection; suggestion for correction), the following corrections may obviate their respective objections: (claim 3, line 1, "The imaging system of claim 2"; replacing "2" with - -1- -) and (claim 5, line 1, "The imaging system of claim 2"; replacing "2" with - -1- -).

For purposes of examination, the claims have been treated as such. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pelc et al., (US Patent Application Publication 2003/0123612) in view of Mistretta et al. (US Patent 5873825), Wen (US Patent 6798118), and Krause et al. (US Patent 4377002).

Pelc et al. discloses an apparatus (fig. 3) comprising a magnetic resonance imaging (MRI) system (fig. 3, #32) having a plurality of gradient coils (paragraph 29, lines 8-10)

Art Unit: 2882

positioned about a bore of a magnet (fig. 3, #34) to impress a polarizing magnetic field (fig. 3, "B₀") about a subject (fig. 3, subject in #50 or 52), and necessarily having an assembly configured to control rotation of a rotatable anode for an x-ray source (paragraph 35, lines 11-13) disposed about the bore of the magnet (fig. 3, #34) for simultaneous acquisition of radiographic and MR data such that the rotatable anode rotates (paragraph 35, lines 11-13) during the simultaneous acquisition of radiographic and MR data (paragraph 32, last 3 lines).

However, Pelc et al. does not disclose an RF transceiver system and an RF switch controlled by a pulse module to transmit RF signals to an RF coil assembly to acquire MR images, a radial flux piezoceramic drive motor, an anode in a bore, and rotating a rotatable anode prior to a pre-data acquisition rotational speed such that the rotatable anode rotates during acquisition as a result of momentum generated in the rotatable anode before acquisition.

Mistretta et al. teaches an RF transceiver system (fig. 1, #150) and an RF switch (fig. 1, #154) controlled by a pulse module (fig. 1, #121) to transmit RF signals to an RF coil assembly (fig. 1, #139) to acquire MR images (title). Wen teaches a radial flux piezoceramic drive motor (col. 1, lines 7-15). Krause et al. teaches rotating a rotatable anode prior to a pre-data acquisition rotational speed such that the rotatable anode rotates during acquisition as a result of momentum generated in the rotatable anode before acquisition (col. 1, lines 25-29).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the apparatus of Pelc et al. with the RF components of Mistretta et al., since one would be motivated to make such a modification for easier control of the MRI system (fig. 1, #122) as implied from Mistretta et al.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the apparatus of Pelc et al. with the motor of Wen, since one would be motivated to make such a modification for avoiding electromagnetic interference effects in a system (col. 1, lines 9-10) as implied from Wen.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the apparatus of Pelc et al. with the rotation using momentum of Krause et al., since one would be motivated to make such a modification for a simple construction (col. 1, lines 21-22) as implied from Krause et al.

It also would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the apparatus of Pelc et al. as modified above with an anode in a bore, since rearranging parts of an invention involves only routine skill in the art. One would be motivated to make such a modification to simplify installation of x-ray system into an MRI system.

Allowable Subject Matter

3. Claims 1, 3-6, 9, 16, 18, 20, 22, and 23 contain allowable subject matter. The following is a statement of reasons for the indication of allowable subject matter.

4. Regarding claim 1, prior art does not disclose or fairly suggest a system including a motor assembly configured to rotate an anode in a magnetic field generated in a magnet bore of an MR imaging apparatus, wherein the motor assembly includes a radial flux motor and a biasing spring operationally connected to the anode such that rotation of the anode by the radial flux

Art Unit: 2882

motor biases the spring in a stored energy condition and wherein the spring is further configured to rotate the anode when the bias placed on the spring is removed such that the motor assembly does not induce flux in the magnetic field during data acquisition, in combination with all the limitations in the claim. Claims 3-6 and 9 contain allowable subject matter by virtue of their dependency.

5. Regarding claim 16, prior art does not disclose or fairly suggest a method including acquiring MR and radiographic data from a subject, and wherein a step of rotating includes a step of counter-rotating an anode prior to data acquisition to store energy in a spring connected to the anode and thereafter removing a bias placed on the anode to allow the spring to release the stored energy during data acquisition, in combination with all the limitations in the claim. Claims 18 and 20 contain allowable subject matter by virtue of their dependency.

6. Regarding claim 22, prior art does not disclose or fairly suggest a magnetic resonance imaging system including a motor assembly configured to control rotation of a rotatable anode disposed in a bore of a magnet, wherein the motor assembly further includes an energy storage device operationally connected to the anode and wherein the motor assembly is further configured to counter-rotate the anode so as to store energy in the energy storage device, in combination with all the limitations in the claim. Claim 23 contains allowable subject matter by virtue of its dependency.

Response to Arguments

7. Applicant's arguments with respect to claims 10 and 11 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao, whose telephone number is (571) 272-2492. The examiner can normally be reached on M - F (9 am to 5 pm).


Art Unit: 2882

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



gk



EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER